

BEGINNING SPLICE
FOR Reel # 302
LANTRATOV, M.F
TO
LAN TSETTER, Ye. M

CA

2

The diagram of state of the systems sodium chloride-calcium chloride-barium chloride. A. P. Alahyshev and

M. P. Lantratov. *Trudy Leningrad. Tekhnol. Inst. im. Leningrad. Spets. 1946, No. 12, 141-51.*—Data for the binary NaCl-CaCl₂ system were taken from Menges (C.A. 6, 44); for NaCl-BaCl₂ from Gernsky (C.A. 8, 2650). (C.A. 6, 44); for CaCl₂-BaCl₂ from Sandonnini (C.A. 8, 2650). New data for the CaCl₂-BaCl₂ system agree with those of Sandonnini and not with Calzagni and Marotta (C.A. 10, 2178), who found a double salt. Bergman and Pavlenko (C.A. 33, 2403) used the latter binary data and have an erroneously complex ternary diagram. The ternary system, studied by visual cooling curves along 4 different cuts of const. binary mol. %: BaCl₂ 17.5, NaCl 33.75, CaCl₂ 46.75. This eutectic is lower than that of the BaCl₂-NaCl-KCl or CaCl₂-NaCl-KCl systems and so is more suitable for electrolysis for Na. W. W.

LANTRATOV, M. F.

3

USSR :

✓ Solutions in fused salts. I. Activity of lead chloride in solutions in alkali and alkaline earth chlorides. M. F. Lantratov and A. F. Alabyshov. *J. Appl. Chem. USSR*, 20, 215-216 (1953) (Engl. translation).—See C.A. 48, 5012f. H. L. H.

① MS Jan

LANTRATOV, M.F.

Chemical Abstracts
May 25, 1954
General and Physical
Chemistry

Investigation of solutions in fused salts. 1. Activity of lead chloride in solutions in alkali and alkaline earth chlorides. M. F. Lantratov and A. F. Anisimov. *Zhur. Priklad. Khim.* 26, 263-76 (1953).—The e.m.f.s. of cells $Pb | PbCl_2 (N_1, a_1) - MCl_2 (N_2, a_2) | graphite, Cl_2$ were measured at 400-700°, and the activities and the activity coefficients were calculated. ($M = Na, K, Li, Ba, Sr, \text{ and } Ca$; N_1, N_2, \dots and a_2 are the resp. mol. fractions and activities). The data are tabulated and given in curves. The deviation of a from the ideal is greater whenever there is a tendency to form complex salts; at higher temps. the deviation decreases. It also decreases with the radius of M and increases with the valence.

I. Hencowit.

USSR.

Investigation of solutions of infused salts. II. Activity of cadmium chloride in alkali metal and alkaline earth chloride solutions. M. F. Lantsov and A. P. Alabyshev. J. Appl. Chem. U.S.S.R. 26, 321-329 (1953) [Engl. translation]; Zhur. Priklad. Khim. 26, 353-63 (1953); cf. C.A. 49, 38g. The e.m.f.s. of the cells $\text{Cd}|\text{CdCl}_2, \text{MCl}_2|\text{graphite}$, with $\text{M} = \text{K}, \text{Na}, \text{and Ba}$ were measured from 450 to 710°, and the activities and activity coeffs. of the salts were calcd. at 500, 600, and 700°. Formation of complexes like CdCl_2 , CdCl_2 , and CdCl_2 caused large neg. deviations from ideal behavior except for dil. solns. of NaCl and BaCl_2 , where CdCl_2 shows pos. deviations. At higher temps. deviations become less neg. owing to increased disson. of the complexes. Deviations become more neg. with increase in cation radius and decrease in cation charge of M. The deviations of CdCl_2 solns. are larger than those of PbCl_2 because of the smaller size of Cd^{++} . Edward J. King

LANTRATOV, M. F.

USSR .

Solutions in fused salts. III. Activity of zinc chloride in solutions of alkali chlorides. M. F. Lantratov and A. F. Alabyshev (V. I. Ul'yanov-Lenin Elektrotech. Inst., Leningrad). *Zhur. Priklad. Khim.* 27, 722-34(1954); cf. C.A. 48, 5612f.—The e.m.f.s. of cells $Zn|ZnCl_2(a_1, M_2)|MCl_2(a_2, M_2)|graphite, Cl_2$ ($M = K, Na, \text{ and } Ba$) in the range 400-600° change not only with the temp. and concn. but also with M and the character of the complexes formed by the ions. The neg. deviation of a_1 decreases as the radius of M decreases and its charge increases. For the chlorides of $Pb, Cd, Zn, \text{ and } Mg$ in solns. of MCl_2 ($M = \text{alkali metals and alk. earth metals}$) the neg. deviation of a_1 increases with the tendency toward complex formation and the stability of the complex ions. For $ZnCl_2$ and $NaCl$ the activity coeffs. γ_1 and γ_2 are less than 1 over the entire concn. range and curves M vs. γ at 600° extrapolated to $N = 0$ give for γ_1 and γ_2 values of 0.102 and 0.120, resp.; these deviations increase for temp. isotherms.

I. Bengowitz

LANTRATOV M. F.

Investigations of solutions of molten metals. I. Activity
of zinc in zinc-antimony-tin solutions. A. P. Alabyshev
and M. F. Lantratov. J. Appl. Chem. U.S.S.R. 27, 1077-
1083 (1954) (English translation).—See C.A. 49, 1417h.
B. M. R.

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①

AT 224

LANTRATOV, M. F.

USSR

Activity of zinc in [molten] zinc-tin-antimony solutions. A. F. Alabyshev and M. F. Lantratov (*Zhur. prikl. Khim.*, 1954, 27, 851-859).—The e.m.f. of the concn. cells $Zn|ZnCl_2 + (KCl, LiCl, NaCl)|Zn-Sn-Sb$ at 615° varies irregularly with change in the relative proportions of the constituents of the molten alloys. These variations are associated with formation of intermetallic compounds. R. Tauscz.

62

137-58-6-11486

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 33 (USSR)

AUTHORS: Alabyshev, A.F., Lantratov, M.F.

TITLE: Thermodynamic Properties of $PbCl_2$, $CdCl_2$, and $ZnCl_2$ in Solutions Thereof with the Chlorides of Potassium, Sodium, Lithium, and Barium (Termodinamicheskiye svoystva $PbCl_2$, $CdCl_2$, i $ZnCl_2$ v rastvorakh ikh s khloridami kaliya, natriya, litiya i bariya)

PERIODICAL: Tr. Leningr. politekhn. in-ta, 1957, Nr 188, pp 93-105

ABSTRACT: Calculations are made of the isobaric-isothermal potentials of formation, ΔZ , the entropy, ΔS , and the enthalpy of formation, ΔH , of the salts $PbCl_2$, $CdCl_2$, and $ZnCl_2$ by the emf's of reversible chemical chain reactions of the type of $M_1[M_1Cl_2(N_1)+M_{11}Cl_n(N_2)]Cl_2$ where M_1Cl_2 represents $PbCl_2$, $CdCl_2$, or $ZnCl_2$, and $M_{11}Cl_n$ represents $LiCl$, KCl , $NaCl$, or $BaCl_2$ at 500-700°C. It is found that the ΔZ of $PbCl_2$ in the presence of KCl , $NaCl$, $LiCl$, or $BaCl_2$ is smaller than for $CdCl_2$ and $ZnCl_2$, and that this is due to the formation in the solution of complex ions, in which the cations Pb^{2+} , Cd^{2+} , and Zn^{2+} are complex-formers. As the radius of the complex-

Card 1/2

137-58-6-11486

Thermodynamic Properties of (cont.)

forming ion and the temperature diminish, the deviation from the ideal in the behavior of the solutions rises; this is attributed to the increase in size of the complex ions.

B.L.

1. Halogen chlorides--Thermodynamic properties 2. Mathematics--Applications

Card 2/2

VYACHESLAVOV, Petr Mikhaylovich, dots., kand. khim. nauk; LANTRATOV, M.F., dots., kand. khim. nauk, retsenzent; GRILDKENS, S.Ya., kand. tekhn. nauk, red.; YAMPOL'SKIY, A.M., inzh., red.; SIMONOVSKIY, H.Z., red. izd-va; SOKOLOVA, L.V., tekhn. red.

[Fundamentals of electroplating] Osnovnye ponyatiia o gal'vano-
tekhnike. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit.
lit-ry, 1958. 38 p. (Bibliotekha gal'vanotekhnika, no.1).
(Electroplating) (MIRA 11:9)

LANTRATOV, M. P.

PHASE I BOOK EXPLOITATION SOV/1297

Vsesoyuznaya nauchno-tekhnicheskaya konferentsiya po primeneniyu radioaktivnykh i stabil'nykh izotopov i izlucheniya v narodnom khozyaystve i nauke, Moscow, 1957

Polucheniye izotopov. Moshchnyye gamma-ustanovki. Radiometriya i dosimetriya; trudy konferentsii... (Isotope Production and High-energy Gamma-Radiation Facilities. Radiometry and Dosimetry; Transactions of the All-Union Conference on the Use of Radioactive and Stable Isotopes and Radiation in the National Economy and Science) Moscow, Izd-vo AN SSSR, 1958. 293 p. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR; Glavnoye upravleniye po ispol'tovaniyu atomnoy energii SSSR.

Editorial Board: Prolov, Yu.S. (Resp. Ed.), Zhavoronkov, M.M. (Deputy Resp. Ed.), Aglintsev, K.K., Alekseyev, B.A., Bochkarev, V.V., Lashchinskiy, M.I., Malkov, T.P., Sinitsyn, V.I., and Popova, G.L. (Secretary); Tech. Ed.: Novichkov, N.D.

PURPOSE: This collection is published for scientists, technologists, persons engaged in medicine or medical research, and others concerned with the production and/or use of radioactive and stable isotopes and radiation.

COVERAGE: Thirty-eight reports are included in this collection under three main subject divisions: 1) production of isotopes 2) high-energy gamma-radiation facilities, and 3) radiometry and dosimetry.

TABLE OF CONTENTS:

PART I. PRODUCTION OF ISOTOPES

Prolov, Yu.S., V.V. Bochkarev, and Ye.Ye. Kulish. Development of Isotope Production in the Soviet Union. 5
This report is a general survey of production methods, operating raw materials, applications, investigations and future prospects for radio isotopes in the Soviet Union.

Card 2/12

Lantsov, M.P., V.Ye. Manoylov, and O.A. Myazdrikov. 246
A Photocolorimetric Method of Beta-dosimetry

Baranov, S.A., and R.M. Polevoy. A Counter for [Determining] 241
the Absolute [Activity] of Charged Particles

Lantsov, M.P., V.Ye. Manoylov, and O.A. Myazdrikov. A 244
"Active" Method of Measuring Beta-activity

Kogan, R.M., and N.K. Pervyslova. The Use of a Photofilm- 260
Scintillating Crystal System for Registering Gamma-
Radiation

Kalugin, K.S., and V.V. Markelov. On the Problem of 264
Measuring Weak Currents

Card 11/12

AUTHORS: Alabyshev, A. F., ~~Lantratov, M. F.~~ SSR/71-17-1-1/7
 Morachevskiy, A. G. (Leningrad)

TITLE: The Thermodynamic Properties of Liquid Alloys Containing Alkali Metals (Termodinamicheskiye svoystva zhidkikh splavov, soderzhashchikh shchelochnyye metally)

PERIODICAL: Uspekhi khimii, 1958, Vol. 27, Nr 8, pp. 921 - 937 (USSR)

ABSTRACT: First the authors mention that during the last years the interest in the investigation of the thermodynamic properties of liquid metal solutions has considerably increased. The investigation of these thermodynamic properties plays an important role in the elaboration of present-day theory of concentrated solutions. The investigation of the thermodynamic properties of potassium and sodium alloys (Refs 22-24) is of special interest. There are, generally speaking, two methods for the experimental investigation of the thermodynamic properties of liquid alloys containing any alkali metal: the method of the measuring of the partial vapor pressure, and the method of measuring the EMF of concentrated chains (Refs 1,2,8,25). After referring to some papers dealing with this field (Refs 31-38) the authors in

Card 1/3

The Thermodynamic Properties of Liquid Alloys
Containing Alkali Metals

SCV/74-27-B-1/7

a special chapter mention the potassium and sodium alloys of lead. In the next chapter the authors deal with the sodium, potassium and cesium alloys of mercury. The third chapter deals with the sodium and potassium alloys with thallium. In the fourth chapter the sodium and potassium alloys with bismuth are described. In the fifth chapter the authors deal with the sodium alloys with tin, and in the sixth chapter with the sodium alloys with cadmium. The seventh chapter deals with the entropy and the degrees of the heat in the mixture of the alloys. Then it is mentioned that the formation of alloys in which also alkali metals are contained takes place exothermally. The partial molar mixture entropy (in formation of compounds) differs greatly from the theoretical values obtained. The considerable negative values ΔS may be explained by the nature of the chemical bonds in metal compounds. There are 19 figures, 1 table, and 79 references, 31 of which are Soviet.

Card 2/3

The Thermodynamic Properties of Liquid Alloys
Containing Alkali Metals

SOV/74-27-8-1/7

1. Alloys (Liquid)--Thermodynamic properties
2. Alkali metals--Thermodynamic properties
3. Intermetallic compounds--Bonding

Card 3/3

ALABYSHEV, A.F.; LANTRATOV, M.F.; SOKOLOVA, L.I.

Electric conductivity of the $\text{NaOH}-\text{Na}_2\text{CO}_3-\text{NaCl}$ system. Zhur.prikl.
khim. 31 no.11:1749-1752 N '58. (MIRA 12:2)

1.Leningradskiy elektrotekhnicheskiy institut imeni V.L. Ul'yanova
(Lenina). (Systems (Chemistry)) (Electric conductivity)

ALABYSHEV, A.F.; GRACHEV, K.Ya.; ZARETSKIY, S.A.; LANTRATOV, M.F.;
FEDOT'YEV, N.P., prof., retsenzent; KHAIN, P.G., inzh., retsen-
zent; MORACHEVSKIY, A.G., red.; ERЛИKH, Yo.Ya., tekhn.red.

[Sodium and potassium; their preparation, properties, and uses]
Natrii i kalii; poluchenie, svoistva, primeneniye. Pod red. A.F.
Alabysheva. Leningrad, Gos.nauchno-tekhn.izd-vo khim.lit-ry,
1959. 390 p. (MIRA 13:3)
(Sodium) (Potassium)

AUTHOR: Lantratov, M.F. and Alabychev, A.F. SOV/SC-90-1-11/41

TITLE: Diagram of the State of the NaOH - Na₂CO₃ - NaCl System (Diagramma sostoyaniya sistemy NaOH - Na₂CO₃ - NaCl)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Nr 1, pp 65-70 (USSR)

ABSTRACT: The diagram of the state of the NaOH - Na₂CO₃ - NaCl system has not been investigated thus far. The authors studied the temperatures of the beginning of crystallization for a number of compounds of this system, rich in NaOH and containing up to 50% (by weight) of NaCl or soda. The investigation was conducted by the visual-polythermal method. The temperature of the crystallization beginning was determined by means of a chromel-alumel thermocouple with an accuracy of $\pm 1^\circ$. The following compounds were investigated: NaOH - NaCl; NaCl - Na₂CO₃; NaOH - Na₂CO₃, and NaOH - Na₂CO₃ - NaCl, and the results of determinations are presented both in the tabular and graphical form. In particular, a part of the triangular of concentrations of the NaOH - Na₂CO₃ - NaCl system pictured in Figure 6 shows that it is possible to store up to 10 to 20% of NaCl with the same concentration of soda in the smelt under practical conditions at a temperature of electrolysis of 300°C. There are 6 graphs, 1 table, and 12 references, 6 of which are Soviet, 2 Italian, and 4 German.

Card 1/2

Diagram of the State of the USSR - 1980 - 1981 System SOV/6-3-1-11/1

ASSOCIATION: Leningradskiy elektromekhanicheskiy Institut i. eni V.I. Ul'yanova (Lenin) (Leningradskiy elektromekhanicheskiy Institut i. eni V.I. Ul'yanov (Lenin))

SUBMITTED: March 21, 1980

Card 2/2

5(4)

AUTHORS:

Lantratov, M. F., Shevlyakova, T. N.

SCV/78-4-5-34/46

TITLE:

The Thermo-dynamical Properties of the Solutions of Melted Salts in the System PbBr_2 -KBr (Termodinamicheskiye svoystva rastvorov rasplavlennykh soley v sisteme PbBr_2 -KBr)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 5, pp 1153-1158 (USSR)

ABSTRACT:

The thermodynamical properties of solutions of melted PbBr_2 -KBr were calculated as follows according to the data of electric conductivity in the reversible chemical chain: $(\text{Graphite})\text{Pb}|\text{PbBr}_2(a_1, N_1)+\text{KBr}(a_2, N_2)|\text{Br}_2(\text{graphite})$. (a_1 and a_2 denote the activities; N_1 and N_2 .. the ratio of molar weights of the components). The lead metal and the initial salts PbBr_2 and KBr are of the highest degree of purity. For the purpose of measuring electric conductivity the high-ohmic potentiometer PPTV-1, and as zero-instrument an optical galvanometer with a sensitivity of $1 \cdot 10^{-9}$ a were used. The construction of the cell for measuring electric

Card 1/3

The Thermo-dynamical Properties of the Solutions of
Melted Salts in the System PbBr_2 -KBr

SOV/78-4-5-34/46

conductivity is shown by figure 1. Measurements were carried out at 380° - 590° . The E_0 -dependence of the chemical chain (graphite) $\text{Pb}|\text{PbBr}_2|\text{Br}_2$ (graphite) on temperature is shown by table 1. Table 2 shows the E_0 of the chemical chain (graphite) $\text{Pb}|\text{PbBr}_2(\text{N}_1)- + \text{KBr}(\text{N}_2)|\text{Br}_2$ (graphite) and the thermo-dynamical data concerning PbBr_2 and KBr at 589° and 539° and the different composition of the solution N_1 . The activities of PbBr_2 at 589° (1) and 539° (2) and of KBr at 589° (3) and the activity coefficients PbBr_2 at 589° (1) and 539° (2) and KBr at 589° (3) are shown by figures 2 and 3. Figures 2 and 3 show that a negative deviation from Raul's law occurs in the system PbBr_2 -KBr. The activity coefficients of PbBr_2 and KBr are in all concentration ranges smaller than unity. In PbBr_2 - and KBr-solutions

Card 2/3

The Thermo-dynamical Properties of the Solutions of Melted Salts in the System $\text{PbBr}_2\text{-KBr}$ SOV/78-4-5-34/46

the complex ions $[\text{Pb}_2\text{Br}_5]^-$ and $[\text{PbBr}_4]^{2-}$ are formed, which cause the negative deviation. Figure 4 shows the partial data concerning $\Delta\bar{Z}_1$ and $\Delta\bar{Z}_2$ and the values of the molar isobaric-isothermal potential (ΔZ). The thermodynamical data of the system $\text{PbBr}_2\text{-KBr}$ at 589° are given in table 3. It was found that the formation of the solution $\text{PbBr}_2\text{-KBr}$ is accompanied by considerable heat generation. The maximum value for the mixing enthalpy is 7460 cal/g-mol. There are 4 figures, 3 tables, and 6 references, 3 of which are Soviet.

SUBMITTED: February 20, 1958

Card 3/3

18(6)

SOV/78-4-6-33/44

AUTHOR: Lantratov, M. F.

TITLE: Investigation of the Thermodynamic Properties of Liquid Metallic Solutions in the System Magnesium - Lead (Issledovaniye termodinamicheskikh svoystv zhidkikh metallicheskh rastvorov v sisteme magniy-svinets)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 6, pp 1415 - 1419 (USSR)

ABSTRACT: The electric conductivity of the concentration chain $Mg/MgCl_2 + (KCl, LiCl, NaCl)/Mg+Pb$ in alloys which contain $N_{Mg} = 1.0 - 0.1$ was measured in the temperature range $650-700^\circ$. The results are given in table 1. The activity, the activity coefficients of the isobaric-isothermal potential and the excess potential of lead were investigated at 700° and the results are given in table 2. The isothermal of the activity of magnesium at 700° and 650° and that of lead at 700° are given in figure 1. The activity coefficients of magnesium at 700° , 650° , and 560° and those of lead at 700° are given in figure 2. The isobaric-isothermal potential of magnesium at

Card 1/2

Investigation of the Thermodynamic Properties of the Liquid Metallic Solutions in the System Magnesium - Lead SOV/78-4-6-33/44

700° is given in figure 3. The thermodynamic integral values of the system magnesium-lead at 700° are given in figure 4. The formation of the magnesium-lead alloys is accompanied by a considerable heat emission. A considerable negative deviation from Raoult's law was detected. The liquid-metallic solution of Mg-Pb is characterized by a considerable mutual influence of the component. The maximum value of the mixture heat amounts to $\Delta H_{\max} = -2.34$ kcal/g-atom. There are 4 figures, 2 tables, and 6 references, 3 of which are Soviet.

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im. V. I. Ul'yanova (Lenina) (Leningrad Electrotechnical Institute imeni V. I. Ul'-yanov (Lenin))

SUBMITTED: March 1, 1958

Card 2/2

5(2)

SOV/76-4-9-19/44

AUTHOR:

Lantratov, M. F.

TITLE:

An Investigation of the Thermodynamical Properties of Liquid Metallic Solutions in the System Sodium - Lead

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 9, pp 2043-2051 (USSR)

ABSTRACT:

A. F. Alabyshev and A. G. Morachevskiy are named in an introductory quotation of the respective publications (Refs 1-5). The investigation of the title systems were carried out for a sodium concentration ranging from 0.05 to 0.9 N_{Na} and temperatures between 400 and 600°. The thermodynamical properties were calculated from values obtained for the electromotive force (EMF) and their temperature coefficients (dE/dT). Na/electrolyte with $Na^+/Na/(N_{Na} + Pb(N_{Pb}))$ (where N_{Na} and N_{Pb} = atomic content of Na and Pb, resp. in the alloys) was used as concentration chain. Solid glass containing sodium oxide was used as electrolyte (Refs 3, 4, 6-11). Experimental values for the EMF and calculated thermodynamical data (activity coefficient, partial and integral molar isobaric-isothermal potential, partial and integral molar entropy, heat mixing additional potential, and additional

Card 1/2

An Investigation of the Thermodynamical Properties of Liquid Metallic Solutions in the System Sodium - Lead SOV/78-4-9-19/44

entropy) are given in tables 1, 2, and in figures 1-5. The EMF shows a linear temperature dependence. The system exhibits considerable deviations from the ideal state, which increase with falling temperatures. This is explained by the existence of structural groups of metallic compounds in the liquid phase (V. I. Danilov Ref 19, and I. V. Radchenko Ref 20). The curve obtained by plotting the sodium activity versus the temperature in a semi-logarithmic coordinate system is linear. The peaks of the integral curve lie between $N_{Na} = 0.5$ and 0.6 . The formation of Na - Pb alloys is exothermic, the maximum for ΔH being -4.25 kcal/g atom. The mixing heat depends largely on the value of the isobaric-isothermal potential. Negative values for the integral molar entropy were found for a large interval ($N_{Na} = 0.8 - 0.23$) which was partly ascribed to the ionic character of NaPb compounds. There are 5 figures, 2 tables, and 33 references, 14 of which are Soviet.

ASSOCIATION: Leningradskiy elektrotekhnicheskii institut im. V. I. Ul'yanova (Lenina) (Leningrad Institute of Electrical Engineering imeni V. I. Ul'yanov (Lenin))

SUBMITTED: May 29, 1958
Card 2/2

5 (4)

AUTHORS: Morachevskiy, A. G., Lantratov, M. F. SOV/79-29-7-1/03

TITLE: Mixing Enthalpy in the Sodium-tin System (Ental'piya smesheniya v sisteme natriy-olovo)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 7, pp 2109-2113 (USSR)

ABSTRACT: In the present paper the determination results of the electromotive forces (EMF) of the concentration chain Na/electrolyte with the ions $\text{Na}^+/\text{Na}+\text{Sn}(1)$ are given in a wide temperature range (400-650°) as well as the concentrations of sodium in the alloy. The data obtained are utilized for the computation of the mixing enthalpy of liquid sodium-tin alloys at 600°. The experimental data mentioned in the papers of references 1-4 do not permit a computation of the mixing enthalpy within the entire range of the compounds because of the lack of reliable data on the temperature coefficient of the $\text{EMF}(\frac{dE}{dT})$ within the range of the concentrations $N_{\text{Na}} = 0.35-0.75$. It was of interest to compute the intensity of the mixing enthalpy from the determinations of the EMF within a wide temperature range and to compare the resultant values with those obtained from

Card 1/2

Mixing Enthalpy in the Sodium-tin System

SOV/19-29-7-1/83

publications by means of direct calorimetric measurements (Ref 5). For this purpose the EMF chains (1) were newly determined in the above temperatures range with sodium concentrations of from 0.05 to 0.85 of atomic yield. The method of determination used was described already earlier (Refs 1,3,6). Table 1 gives the EMF values of the temperature coefficient $(\frac{dE}{dT})$ as well as those of the partial molar isobaric-isothermal potentials $(\Delta \bar{Z}_{Na})$ and of the mixing enthalpy $(\Delta \bar{H}_{Na})$ of sodium at 600°. Figure 1 illustrates the temperature dependence of the EMF for alloys of various compositions and figure 2 shows the dependence of $\frac{dE}{dT}$ on the composition of the alloy. There are 4 figures, 2 tables, and 16 references, 7 of which are Soviet.

ASSOCIATION: Leningradskiy politekhnicheskii institut i Leningradskiy elektrotekhnicheskii institut imeni V. I. Ul'yanova (Lenina)
(Leningrad Polytechnic Institute and Leningrad Institute of Electrical Engineering imeni V. I. Ul'yanov (Lenin))

SUBMITTED: June 26, 1958
Card 2/2

AUTHORS: Lantratov, M.F., Solov'yeva, M.I. SOV/80-32-2-11/56

TITLE: Investigation of the Thermodynamic Properties of Liquid Metal Solutions of Potassium With Bismuth (Issledovaniye termodinamicheskikh svoystv zhidkikh metallicheskh rastvorov kaliya s vismutom)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol XXXII, Nr 2 pp 304-308 (USSR)

ABSTRACT: The thermodynamic properties of potassium were calculated from the emf - values of the circuit potassium/electrolyte with the ions potassium/potassium (N_K) + bismuth (N_{Bi}). In the liquid K - Bi solutions considerable negative deviations from an ideal behavior are observed. For an alloy with $N_K = 0.5$ the activity is 0.00018, for $N_K = 0.45$ it is 0.000,001,74. This is explained by the binding of potassium into stable structural groups of metallic compounds. Figure 2 shows that the activity isotherm of bismuth (Curve 3) is completely in the area of negative deviations. In Figure 3 the integral excess potential (Curve 1), the excess entropy of mixing (Curve 2), the mixing heat (Curve 3), and the potential (Curve 4) show clearly marked extremes which are due to the character of the bonds in the formed metallic

Page 1/2

SOV, 80-92-2-11/56

Investigation of the Thermodynamic Properties of Liquid Metal Solutions of Potassium With Bismuth

compounds.

There are 3 graphs, 3 tables, and 9 references, 5 of which are Soviet, 5 German, and 1 English.

ASSOCIATION: Leningradskiy elektromekhanicheskiy institut imeni V.I. Il'yayeva (Leningrad) (Leningrad) / Elektrotechnical Institute named V.I. Il'yayeva (Leningrad)

SUBMITTED: March 21, 1958

Card 2/2

5(4) .

SOV/76-33-B-20/33

AUTHORS: Lantirato, M. F., Tsarenko, Ye. V.

TITLE: Investigation of the Thermodynamic Properties of Liquid Metallic Solutions. The System Potassium-Thallium

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 8, pp 1792-1797 (USSR)

ABSTRACT: The electromotive force (EMF) of the concentration cells $K | \text{glass} | K-Tl$ for solutions with 12.6 to 95 atom% Tl was measured in the temperature range of 475-525°C. The design of the measuring cell (Fig 1) was the one described in references 2, 3, 11. The electrolyte was glass 35-5K (68% SiO_2 , 29% B_2O_3 , 3% Al_2O_3 , 4% Na_2O and 5% K_2O). The temperature was measured with a chromel/aluminum thermocouple via a potentiometer PP while the (EMF) was determined by means of a potentiometer PPTV-1. The thermodynamic properties of the liquid K-Tl solutions were calculated from the (EMF) values obtained for the concentration cells potassium | electrolyte with K^+ ions | potassium (N_K)-thallium (N_{Tl}) (Table 1) (N_K and N_{Tl} = atomic fraction of solution components). The

C-rd 1/3

SOV/76-33-8-20/33

Investigation of the Thermodynamic Properties of Liquid Metallic Solutions.
The System Potassium-Thallium

properties calculated were activity, activity coefficient, partial molar free energies and excessive free energies for K and Tl at 525°C, as well as the integral values of the molar free energies ΔF of the excessive free energies ΔF^* of the mixture entropy ΔS , of the excessive mixture entropy ΔS^* , and the mixture heat ΔH (Table 2). The activity of K exhibits a complex dependence on the composition. Alloys with 0 - 25 At% Tl show a positive deviation from Raoult's law while solutions with less than 25 At% Tl deviate in the negative direction. These deviations are increased by lower temperatures. A similarly complicated matter are the isotherms of the activity coefficient of K. This behavior of liquid K-Tl solutions is considered to be due to a strong reaction taking place between K and Tl whereby structural groups of metallic compounds form in the solution. The integral curves of ΔF , ΔF^* , ΔS , and ΔH exhibit extremes at $N_K = 0.4$ $\Delta H = 3560$ cal, $\Delta F = 2680$ cal, $\Delta F^* = 1510$ cal and $\Delta S^* = 2.44$ cal/degree. Since the values ΔH are for all compositions greater than the respective values for ΔF^* , K-Tl solutions may not be regarded as "regular"

Card 2/3

SOV/76-33-B 20/39

Investigation of the Thermodynamic Properties of Liquid Metallic Solutions.
The System Potassium-Thallium

ones (Ref 13). The shift of the extreme value away from the one which would correspond to the most stable K-Tl compound is explained by the fact that there are in the liquid alloys compounds richer in Tl side by side with the K-Tl compound. There are 4 figures, 2 tables, and 13 references, 5 of which are Soviet.

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im. V. I. Ul'yanova
(Lenina)
(Leningrad Electrotechnical Institute imeni V. I. Ul'yanov
(Lenin))

SUBMITTED: January 31, 1958

Card 3/3

5(4)

05837
SOV/76-55-10-35/45

AUTHORS: Lantratov, M. F., Morachevskiy, A. G.

TITLE: On the Use of Glass as an Electrolyte in Investigations of the Thermodynamic Properties of Sodium Alloys

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 10, pp 2339 - 2344 (USSR)

ABSTRACT: Investigation of the thermodynamic properties of metallic systems by measuring the electromotive force encounters some difficulties when using melted salts of these metals so that preferable use is made of solid electrolytes. The following authors have worked in this field: Wachter (Ref 8), Triempler (Ref 9), Hauffe (Ref 5), Kubaschewski and Hugler (Ref 7), Wagner and Engelhardt (Ref 3), Vierk (Ref 17), Porter and Peinleib (Ref 18), A. F. Alabyshv and A. G. Morachevskiy (Ref 15), Prudenschill and Halla (Ref 12), as well as Halla and Hardy (Ref 13). The applicability of the following kinds of glass as electrolytes in investigations of sodium alloys was checked here: Nr 23, Nr 29, Nr 46, ZS-8, ZS-5K, and glass containing boron and sodium (Refs 19,20) (Table 1: composition of these kinds of glass). The electromotive force of the cells Sodium|glass|sodium alloy and Na|glass|melted elec-

Card 1/2

05837

On the Use of Glass as an Electrolyte in Investigations of the Thermodynamic Properties of Sodium Alloys SOV/76-33-10-35/45

trolyte with sodium ions|glass|sodium alloy was measured at 400-550° by means of a PPTV-1 potentiometer and a mirror galvanometer. It was found that the electromotive force did not depend on the kind of glass used (Tables 2-3) and the two afore-mentioned cells are equivalent in accordance with the theoretical conditions established by Haber (Ref 21), Truempler (Ref 22), Truempler and Schuler (Ref 22). There are 3 figures, 3 tables, and 25 references, 7 of which are Soviet.

ASSOCIATION: Leningradskiy elektrotekhnicheskii institut im. V. I. Ul'yanova (Lenina) (Leningrad Institute of Electrical Engineering imeni V. I. Ul'yanov (Lenin)). Leningradskiy politekhnicheskii institut im. M. I. Kalinina (Leningrad Polytechnic Institute imeni M. I. Kalinin)

SUBMITTED: April 2, 1958

Card 2/2

5.4700
5.1310
5(4)

66855

SOV/76-33-11-9/47

AUTHORS: Lantratov, M. F., Alabyshev, A. F.

TITLE: Investigation of the Thermodynamic Properties^{1\} of Liquid Metallic Solutions of Potassium With Thallium, Lead, and Bismuth

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 11, pp 2429-2434 (USSR)

ABSTRACT: The investigation of the alkaline-metal alloys are of special interest for the development of a new production method of these metals by electrochemical deposition on a liquid lead cathode and subsequent vacuum distillation of the alloy. In the present case the method of the electromotive force was applied, and the thermodynamic properties of the cell potassium | electrolyte with potassium ions | potassium alloy were calculated. K₂O-containing glass was used as electrolyte, as was also done in the studies of Hauffe (Ref 1), Kubaschewski and Hugler (Ref 2), Vierk (Ref 3), as well as A. F. Alabyshev and A. G. Morachevskiy (Refs 5-8). The design of the cell (Fig 1) and the operational method were described in detail in references 1 and 7. The isothermal lines and activity coefficients of potas-

Card 1/3

66855

SOV/76-33-11-9/47

Investigation of the Thermodynamic Properties of Liquid Metallic Solutions of Potassium With Thallium, Lead, and Bismuth

sium and thallium at 525°C show that a deviation from the Raoult law occurs. This may be explained by structural groups which are present in the liquid alloy. The system potassium - lead was investigated in the temperature range 525-600°C. No separation of layers was observed, in contradistinction to the data of reference 12 and in accordance with the explanation of D. N. Shoykhet, A. G. Morachevskiy, and A. F. Alabyshev. For potassium and lead, the activity isothermal lines negatively deviated from the Raoult law. The alloy potassium - bismuth was tested at 575°C. Heat emission was observed during the formation of the alloy, and it was found that only the stable compound of K_2Bi is present. The considerable negative deviation of the excess mixing entropy is explained by the partially ionic character of the bonds in the compounds. There are 7 figures and 12 references, 6 of which are Soviet.

ASSOCIATION:
Card 2/3

Elektrotekhnicheskiy institut im. V. I. Ul'yanova (Lenina),
Leningrad (Institute of Electrical Engineering imeni V. I. Ul'-

66855

SOV/76-33-11-9/47

Investigation of the Thermodynamic Properties of Liquid Metallic Solutions
of Potassium With Thallium, Lead, and Bismuth

yanov (Lenin), Leningrad

Card 3/3

LANTRATOV, M. F.

8505/105

WAS I BOG EXPLOSION

— — — — — **Y. Pasyukov, eds.**

Sovgordiztekni, M. P., and V. V. Razumovskiy. *Spravochnik po elektrotehnicheskim materialam. V dvukh tomakh. Tom 2: Magnitnye, provodnikovyye, poluprovodnikovyye i drugie materialy* (Handbook on Electrical Engineering Materials. Part 2: Magnetic, Conducting, Semiconducting, and Other Materials). Moscow, Gosenergizdat, 1960. 511 p. Errata two volumes. 70,000 copies printed.

slip inserted. 30,000 copies.
Egs. of Handbook: L. A. Andrianov, M. P. Bogoroditskiy, (this
Eds. of Handbook: L. A. Andrianov, M. P. Bogoroditskiy, and B. N. Tarayev; Eds. (this
Yu. V. Koritskiy, Y. V. Pasyukov, and B. N. Tarayev; Eds. (this
vol. 1). M. P. Bogoroditskiy and V. V. Pasyukov; Tech. Ed.:
Ye. M. Skoboleva.

PURPOSE: This handbook is intended for technical personnel of electrical and radio engineering establishments, power stations and substations, electric repair shops, laboratories, and scientific institutions. The handbook contains basic information on carbon.

[illegible]

Handbook on Electrical Engineering (Cont.)

SOV/5058

PART V. MATERIALS WITH ELECTROLYTIC CONDUCTIVITY AND
MATERIALS FOR GALVANIC CELLS AND STORAGE BATTERIES

Ch. XXX. General Information on Electrolytes (A. F. Alabyshev
and M. F. Lantratov)

- | | |
|--|-----|
| 1. Concept of electrolytes | 444 |
| 2. Electrical conductivity of electrolytes | 446 |
| 3. Equilibrium in electrolyte solutions | 449 |
| 4. Electrode potentials | 451 |
| 5. Electrolysis | 454 |

Ch. XXXI. Information on the Most Frequently Used Aqueous
Solutions of Alkalies, Acids, and Salts
(M. F. Lantratov)

- | | |
|---|-----|
| 1. Solubility of salts, acids and alkalies | 454 |
| 2. Density of aqueous solutions | 455 |
| 3. Electrical conductivity of aqueous solutions | 459 |
| 4. Surface tension of aqueous solutions | 459 |
| 5. Viscosity of aqueous solutions | 459 |

Card 17/19

Handbook on Electrical Engineering (Cont.)

SOV/5058

| | |
|---|-----|
| 6. Plating electrolytes. Copper plating | 459 |
| 7. Nickel plating | 461 |
| 8. Chrome plating | 462 |
| 9. Zinc plating [galvanizing] | 463 |
| 10. Cadmium plating | 464 |
| 11. Tinning [tin plating] | 465 |
| 12. Lead plating | 467 |
| 13. Silver plating | 467 |
| 14. Gold plating | 46 |
| 15. Oxide coating | 46 |
| 16. Parkerizing | 470 |
| 17. Electrochemical polishing of metals | 470 |

Ch. XXXII. Materials for Galvanic Cells and Storage
Batteries (M. F. Lantratov)

| | |
|----------------------------------|-----|
| 1. Galvanic Cells | 471 |
| 2. Lead (acid) storage batteries | 473 |
| 3. Alkaline storage batteries | 482 |

Card 18/19

Handbook on Electrical Engineering (Cont.)

SOV/5058

Ch. XXXIII. Physicochemical Properties of Fused Salts
(M. F. Lantratov)

- | | |
|---|-----|
| 1. Density of fused salts | 484 |
| 2. Viscosity of fused salts | 486 |
| 3. Surface tension of fused salts | 488 |
| 4. Electrical conductivity of fused salts | 490 |
| 5. Electromotive series in fused salts | 494 |
| 6. Other properties of fused salts | 494 |

Bibliography to Part V [22 references, all Soviet] 495

Miscellaneous Information 496

Index 501

AVAILABLE: Library of Congress

Card 19/19

JP/dfk/os
5/8/61

S/153/60/003/004/017/040/XX
B020/B054

AUTHORS: Alabyshev, A. F., Lantratov, M. F., Morachevskiy, A. G.
TITLE: Electromotive Force of the Chemical Chain $Pb | PbCl_2 | Cl_2$
PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i
khimicheskaya tekhnologiya, 1960, Vol. 3, No. 4,
pp. 649 - 652

TEXT: The authors attempted to interpret the principal causes of the divergence of experimental results, and their deviation from results obtained on the basis of thermodynamic calculations. These problems are studied by the example of emf of the chain mentioned in the title. A table lists experimental data obtained by various authors who studied this chain, as well as theoretical values of emf of this chain calculated from thermodynamic data (Ref.15). A figure illustrates the deviation of experimental results found by various authors from thermodynamically calculated values. Measurement results of emf of the chain mentioned in the title show that the change of emf with temperature is almost linear. Emf values nearest to the thermodynamically calculated values

Card 1/2

Electromotive Force of the Chemical Chain $\text{Pb} | \text{PbCl}_2 | \text{Cl}_2$ S/153/60/003/004/017/040/XX
B020/B054

were obtained in investigations in which the chlorine electrode was obtained by saturation of a graphite electrode with chlorine gas, as well as in those in which the electrode spaces were separated from each other. The space around the chlorine electrode must be saturated with chlorine, and the space around the lead electrode with lead. A penetration of lead into the zone of the chlorine electrode should be avoided to exclude reactions leading to depolarization. The preliminary treatment of the graphite rods used to manufacture the chlorine electrode is very important; this treatment consists in a prolonged chlorination at high temperatures. The purity of the graphite used is also important. B. P. Artamonov (Ref.9) is mentioned. There are 1 figure, 1 table, and 18 references: 9 Soviet, 2 US, 6 German, and 1 British.

ASSOCIATION: Leningradskiy politekhnicheskiy institut im. M.I. Kalinina, kafedra obshchey khimii (Leningrad Polytechnic Institute, Department of General Chemistry)

SUBMITTED: December 8, 1958

Card 2/2

LANTRATOV, M.F., TSARENKO, Ye.V.

Thermodynamic properties of the liquid metallic solutions of
Zn - Bi and K - Cd systems. Zhur.prikl.khim. 33 no.5:1116-1128
My '60. (MIRA 13:7)

1. Leningradskiy elektrotekhnicheskij institut im. V.I. Ul'ya-
nova (Lenina).
(Zinc) (Bismuth) (Potassium) (Cadmium)

SKIRSTYMONSKAYA, B. I., LANTRATOV, M. F.

Simultaneous discharge of a metal and hydrogen. Zhur.prikl.khim.

33 no.5:1128-1133 My '60.

(MIRA 13:7)

(Electroplating)

(Reduction, Electrolytic)

5 2610

S/080/60/033/007/007/020
A003/A001

AUTHORS: Lantratov, M. F., Tsarenko, Ye. V.

TITLE: An Investigation of Thermodynamic Properties of Liquid Metal Solutions in the Potassium-Mercury System

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol. 33, No. 7, pp. 1539-1546

TEXT: The thermodynamic properties of liquid alloys of potassium with mercury were investigated within the temperature range of 250-350°C and within the concentrations $N_K = 0.04992 - 0.898$ by the emf method. The thermodynamic properties were calculated from the emf values (E) and the temperature coefficients of emf ($\frac{dE}{dT}$) of the concentration circuits: $K | \text{solid electrolyte containing } K + | K (N_K) - Hg (N_{Hg})$, where N_K and N_{Hg} are the atomic percentage of potassium and mercury, respectively. Equations were presented for the calculation of the partial values of the isobaric-isothermal potential and the excess potential of potassium, for the partial molar entropy of mixing and the excess entropy of the mixture, for the partial molar heat of the mixture, etc. The emf was measured by a ППТБ-1 (PPTV-1) potentiometer. It was shown that the activity of potassium depends on the composition of the alloy. In solutions

Card 1/2

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S/080/60/033/007/007/020

A003/A001

An Investigation of Thermodynamic Properties of Liquid Metal Solutions in the Potassium-Mercury System

containing from 0 to 35.5 atomic % mercury positive deviations from Raoult's law and in solutions containing more than 35.5 atomic % large negative deviations are observed. The most stable compound in the K-Hg system is KHg_2 . The curve of the integral heat of mixing has a clear extremum at $N_K = 0.36$, i. e., in the region of the composition KHg_2 . The maximum molar heat is -4.3 kcal/g-atom. There are 5 graphs, 2 tables and 20 references: 8 Soviet, 8 German, 3 English and 1 American. X

SUBMITTED: January 28, 1960

Card 2/2

SKIRSTYMONSKAYA, B.I.; LANTRATOV, M.F.

Simultaneous liberation of a double metallic alloy and hydrogen. Zhur.prikl.khim. 33 no.7:1552-1556 J1 '60.
(MIRA 13:7)

(Copper-zinc alloys) (Hydrogen)

5 2100

25059

S/080/60/033/010/008/029

D216/D306

AUTHORS: Lantratov, M.F., and Moiseyeva, O.F.

TITLE: Electrical conductivity of mixtures of the fused salts of the $\text{NaCl} - \text{CaCl}_2 - \text{BaCl}_2$ system

PERIODICAL: Zhurnal prikladnoy khimii, v. 33, no. 10, 1960
2225 - 2234

TEXT: This is a continuation of the work of A.F. Alabyshev and E. Ya. Kulakovskaya, who found that by raising the calcium chloride and more especially the barium chloride content the conductivity was reduced. The ternary system $\text{NaCl} - \text{CaCl}_2 - \text{BaCl}_2$ is a new easily-

ly-fusible electrolyte for producing metallic sodium from sodium chloride, and the present study was made with a view of widening the range both of compositions and of temperatures. The composition range was divided into six sections; I. $\text{NaCl}:\text{CaCl}_2 = 3:7$; X

Card 1/3

25059

S/080/60/033/010/008/022

D216/D306

Electrical conductivity of ...

II. $\text{NaCl}:\text{CaCl}_2 = 1:1$; III. $\text{NaCl}:\text{CaCl}_2 = 7:3$; IV. $\text{CaCl}_2:\text{BaCl}_2 = 3:2$; V. $\text{CaCl}_2:\text{BaCl}_2 = 3:1$; VI. $\text{CaCl}_2:\text{NaCl}_2 = 7:1$. The conductivity was measured with a similar apparatus to that described by the authors in a previous paper. The salts NaCl , CaCl_2 and BaCl_2 were desiccated beforehand, and to eliminate traces of water and oxides the BaCl_2 was heated in a current of HCl at $500-800^\circ$, the NaCl and CaCl_2 were fused and dry HCl was passed through the melt. Conductivity isotherms of the system $\text{NaCl}-\text{CaCl}_2$ show minima for 10-20 mol % NaCl . The product of specific conductivity by viscosity is an important relationship. O. Menge has described a compound $4\text{NaCl}\cdot\text{CaCl}_2$ melting with decomposition at 650° and showing a eutectic at 47.2% NaCl at 500° . Pichugin did not confirm this but found that $\text{NaCl}-\text{CaCl}_2$ is a simple eutectic system. The breakdown of the $\text{NaCl}-\text{CaCl}_2$ system does not give definite indications about the presence of complex ions. The article then indicates via graphs: The isotherms

Card 2/3

25059

S/080/60/033/010/008/029

D216/D306

Electrical conductivity of ...

of specific conductivity of the system $\text{CaCl}_2\text{-BaCl}_2$; Conductivity isotherms for various sections of the system $\text{CaCl}_2\text{-BaCl}_2$, 7:1; 3:1; 3:2, respectively; Isotherms (800°) of conductivity of mixtures $\text{NaCl-CaCl}_2\text{-BaCl}_2$ for sections with constant ratio of $\text{CaCl}_2\text{-BaCl}_2$; Conductivity of the system $\text{NaCl-CaCl}_2\text{-BaCl}_2$ for section I ($\text{NaCl:CaCl}_2 = 3:7$). Specific conductivity in $\Omega^{-1} \cdot \text{cm}^{-1}$ for various BaCl_2 contents (mol %), and conductivity isotherms for sections I-III in which the ratio NaCl:CaCl_2 is held constant and the BaCl_2 content varied. Conductivity of mixtures of NaCl-CaCl_2 is appreciably lowered by adding BaCl_2 which also causes lower conductivity by adding to pure NaCl . There are 11 figures and 19 references: 13 Soviet-bloc and 6 non-Soviet-bloc. The references to the English language publications read as follows: J. Story, I. Clarke, J. Metals, 11, 1449, 1957; H. Bloom, J.W. Knaggs, I.I. Melloy, D. Welch, Trans. Faraday Soc., 49, 1458, 1953. SUBMITTED: March 28, 1960 Card 3/3

5. 4600

68852

AUTHORS:

Lantratov, M. F., Moiseyeva, O. F.S/076/60/034/02/016/044
BC10/B017

TITLE:

Electrical Conductivity of the Solutions of Molten Salts.
I. The System PbCl_2 - KCl

PERIODICAL:

Zhurnal fizicheskoy khimii, 1960, Vol 34, Nr 2, pp 367-374 (USSR)

ABSTRACT:

The electrical conductivity of the system PbCl_2 - KCl has already been investigated by N. M. Tarasova (Ref 8) and in the paper (Ref 13); contradictory results have been obtained, however. In the present paper, the entire system was investigated in the concentration range of 0-100 mol% KCl and in a temperature range of 425-800°C. The measurements were made on an improved a.c. bridge circuit (Fig 1) with an EG-10 generator as current source, and an electronic EO-7 oscillograph as indicator. A quartz cylinder with a capillary (30-50 mm long, diameter: 0.8-1.2mm) and Pt/PtRh thermocouples served as analyzers (Fig 2). The measurements were made polythermally. The results obtained (Table 1, specific electrical conductivity; Table 2, equivalent electrical conductivity at 500 and 650°C) and those from reference 13 do not agree with the observations made by N. M. Tarasova. Strongly negative deviations of the electrical conductivity were observed. The isothermal lines

Card 1/2

Electrical Conductivity of the Solutions of
Molten Salts. I. The System PbCl_2 - KCl

68852
S/076/60/034/02/016/044
B010/B017

of the specific and equivalent electrical conductivity show a strong minimum at a composition $N_{\text{KCl}} = 0.6-0.7$ which becomes more distinct at lower temperatures. The minimum is explained by the presence of complex lead ions in the PbCl_2 - KCl melt. This assumption is confirmed by the experimental results on viscosity, surface tension, thermodynamic properties, transference number, and other properties of the system investigated. The isotherm of the equivalent electrical conductivity shows a smaller maximum at $N_{\text{KCl}}=0.1$ which is explained by a dissociation of the autocomplex $(\text{Pb} [\text{PbCl}_4])_n$ on addition of small amounts of KCl under formation of the ions K^+ , Pb^{2+} and the complex ions $[\text{PbCl}_4]^{2-}$. The curve of electrical conductivity of pure PbCl_2 shows a wave dependent on the temperature at $600-650^\circ$ which is explained by the structural change of the molten PbCl_2 at a temperature increase. There are 5 figures, 2 tables, and 23 references, 15 of which are Soviet.

ASSOCIATION: Elektrotekhnicheskiy institut im. V. I. Ul'yanova (Lenina) Leningrad (Institute of Electrical Engineering imeni V. I. Ul'yanov (Lenin) Leningrad)

SUBMITTED: May 6, 1958
Card 2/2

5.4700

80226

S/076/60/034/04/13/042
B010/B009

AUTHOR: Lantratov, M. F. (Leningrad)

TITLE: Investigation of the Thermodynamic Properties of Liquid Metal Solutions. The System Potassium - Lead

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 4, pp. 782-788

TEXT: Owing to the new method of potassium production by an electrochemical deposition of potassium on a liquid lead cathode and subsequent vacuum distillation the thermodynamic properties of the system potassium-lead have become practically important. Liquid metal solutions of potassium and lead were investigated by the emf method in concentrations between 0,05 and 0,9 N_K (N_K = atomic portion of potassium) and at temperatures from 525 to 600°. The electromotive forces were measured in concentration chains potassium || glass | potassium - lead, hard glasses containing potassium oxide (of the types No. 23, 29, and ZS-"5k") being used as electrolytes. The measuring cell and working method were similar to those described in Refs. 2 and 6. The work was carried out in a purified argon atmosphere. The values of the activity, activity

Card 1/3

Investigation of the Thermodynamic Properties
of Liquid Metal Solutions. The System Potassium-
Lead

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S/076/60/034/04/13/042
B010/B009

coefficients, partial molar entropy, and heat of mixing as well as the corresponding values of the integral molar values for 550 and 600° were calculated for the solutions under investigation (Tables 1,2) Highly negative deviations from the ideal behavior were observed, which is believed to be due to the presence of structural groups of metallic compounds in the liquid phase of the K-Pb system. An extreme of the integral curves is found in the case of a composition $N_K = 0.5-0.6$. The formation of the K-Pb alloys is exothermic, with a maximum $H_K = -5.06$ kcal/g-atom. The heat of mixing is mainly determined by the isobar-isotherm potential. An approximately linear dependence of the logarithm of the activity of potassium upon temperature was noted. The negative values of the mixing entropy are considered to be due to the partly ionic character of the bond in the potassium - lead compounds. KPb is considered to be the most stable compound in the system under investigation. A. G. Morachevskiy is mentioned in the text. There are 6 figures, 2 tables, and 13 references, 5 of which are Soviet.

Card 2/3

60226

Investigation of the Thermodynamic Properties of
Liquid Metal solutions. The System Potassium -
Lead

S/076/60/034/04/13/042
B010/B009

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im. V. I. Ul'yanova
(Lenina) (Leningrad Electrotechnical Institute imeni V. I. Ul'yanov
(Lenin))

SUBMITTED: June 18, 1958

Card 3/3

30195

S/080/61/034/011/006/020

D227/D301

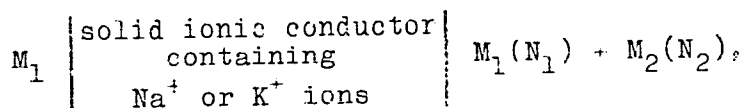
215240

AUTHORS: Lantratov, M.F., and Tzarenko, Ye.V.

TITLE: Thermodynamic properties of Na-Ga and K-Ga solutions

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 11, 1961,
2435 - 2441

TEXT: Following their studies of the above systems, the authors devote the present work to determining thermodynamic properties of these systems from the values of emf's (E) and emf temperature coefficients (dE/dT) of chains:



where M_1 - more electronegative metal (Na or K), M_2 - second component of the solution (Ga), N_1 and N_2 - atomic fractions of the components. If the state of a pure component is taken as a standard.
Card 1/5

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D227/D301

Thermodynamic properties of Na-Ga ...

then the values of molar isobar-isothermic potential ($\Delta \bar{Z}_1$) and excess potential ($\Delta \bar{Z}_1^*$) also activity (α_1) and activity coefficient

($\gamma_1 = \frac{\alpha_1}{N_1}$) may be calculated from the equations:

$$\Delta \bar{Z}_1 = -23060E = 4.575T \lg \alpha_1 \text{ cal/g. atom}$$

$$\Delta \bar{Z}_1^* = \Delta \bar{Z}_1 - 4.575T \lg N_1 = 4.575T \lg \gamma_1 \text{ cal/g. atom.}$$

Partial molar entropy of mixing ($\Delta \bar{S}_1$) and excess entropy of mixing ($\Delta \bar{S}_1^*$) are calculated from the equations.

$$\Delta \bar{S}_1 = 23060 \frac{dE}{dT} \text{ cal/deg.g. atom}$$

$$\Delta \bar{S}_1^* = \Delta \bar{S}_1 + 4.575 \lg N_1 \text{ cal/deg.g. atom.}$$

Partial heat of mixing equals:

$$\Delta \bar{H} = \Delta \bar{Z}_1 + T \Delta \bar{S}_1 = 23060 \left(T \frac{dE}{dT} - E \right) \text{ cal/g. atom.}$$

Card 2/5

30195

S/080/61/034/011/006/020
D227/D301

Thermodynamic properties of Na-Ga ...

Integral values are obtained by graphical integration using equation:

$$\Delta \bar{G} = (1 - N_1) \int_0^{N_1} \frac{\Delta \bar{G}_1}{(1 - N_1)^2} dN_1$$

where $\Delta \bar{G}$ - any principal function of state. Principal values of thermodynamic magnitudes for the second component were calculated from the integral values from equation: $\Delta \bar{G} = N_1 \cdot \Delta \bar{G}_1 + N_2 \cdot \Delta \bar{G}_2$ where $\Delta \bar{G}$ - integral, $\Delta \bar{G}_1$ and $\Delta \bar{G}_2$ - partial functions of state of the system. The experimental part involved the use of apparatus described in earlier works. Tests were carried out in argon atmosphere using glasses containing Na₂O or K₂O as electrolyte. Metals used were of high purity. Measurements of the emf were done potentiometrically with accuracy of $\pm 0.2 - 0.002$ mV and that of temperature with chromel-aluminum thermocouple with accuracy of $\pm 1^\circ\text{C}$. For Na - Ga systems the investigations were carried out at 550-625°C and compositions $N_{\text{Na}} = 0.108$ to 0.7964, and it was observed that emf, X

Card 3/5

30195

Thermodynamic properties of Na-Ga ...

S/080/61/034/011/006/020
D221/D301

within that temperature range, was proportional to the temperature. Temperature coefficients of emf of sodium-rich alloys had positive values and sodium-poor alloys had negative values. The activity isotherm for sodium at 550°C and concentration $N_{Na} > 0.25$ shows

more positive deviation and slight negative deviation for $N_{Na} < 0.25$

The activity isotherm for gallium on the other hand shows a negative deviation for $N_{Na} < 0.73$ and slight positive deviation for sodium-rich solutions. Such behavior of both activity isotherms indicates the existence, in the liquid alloys, of groups of asymmetric structure, Na_5Ga_8 and $NaGa_3$. The non-symmetry of partial potential curves $\Delta \bar{Z}_{Na}$ and $\Delta \bar{Z}_{Ga}$ is also due to the asymmetry of Na Ga compounds. The integral and partial heats of mixing and also curves for ΔZ^* and $T\Delta S$ are given. The curve for the integral heat has a minimum at $N_{Na} = 0.37$, i.e. within the region of Na_5Ga_8 composition and the maximum ΔH corresponds to - 1760 cal/g. atom. From the graph it follows that ΔH is determined by ΔZ changes

Card 4/5

00195

S/080/61/034/011/006/020
D227/D301

Thermodynamic properties of Na-Ga ...

and $T\Delta S$ has only a small effect on its values. Partial molar entropy of mixing for sodium $\Delta \bar{S}_{Na}$ depends on the composition and has positive or negative values according to the sodium content. In investigations of K - Ga systems the authors determined the activity of potassium at 625°C for alloys $N_K = 0.9$ to 0.1, and found that the behavior of such systems is analogous to Na-Ga systems. There are 5 figures, 2 tables and 8 references: 6 Soviet-bloc and 2 non-Soviet-bloc. The reference to the English-language publication reads as follows: M. Hansen, K. Anderko, Constitution of binary alloys N.Y., Toronto, London, 1958.

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im. V.I. Ul'yanova (Lenina) (Leningrad Electrotechnical Institute im. V.I. Ul'yanov (Lenin))

SUBMITTED: January 23, 1961

Card 5/5

LANT.ATOV, M.F.; SHEVLYAKOVA, T.M.

Thermodynamic properties of fused salt solutions in the system
 PbBr_2 - NaBr. Zhur. neorg. khim. 6 no.1:192-198 '61. (M.A. 14:2)
(Lead bromide) (Sodium bromide)
(Lead chloride)

LANTRATOV, M.F.

Thermodynamic properties of liquid metal solutions in the system
antimony - cadmium - tin. Zhur. prikl. khim. 34 no.1:130-138 Ja
'61. (MIRA 14:1)

(Antimony)

(Cadmium)

(Tin)

LANTRATOV, M.F.; SHEVLYAKOVA, T.N.

Thermodynamic properties of solutions of fused salts in the
system CdBr_2 - KBr . Zhur. prikl. khim. 34 no.5:1065-1071
My '61. (MIRA 16:8)

1. Leningradskiy elektrotekhnicheskiy institut imeni V.I.
Ul'yanova (Lenina).
(Cadmium bromide) (Potassium bromide)

LANTRATOV, M.F.; MOISEYEVA, O.F.

Electric conductivity of fused salt solutions in the system
 $PbCl_2 - TlCl$. Zhur. prikl. khim. 34 no.5:1169-1171 My '61.
(MIRA 16:8)

1. Leningradskiy elektrotekhnicheskii institut im. Ul'yanova
(Lenina).

(Lead chloride—Electric properties)

(Thallium chloride—Electric properties)

LANTRATOV, M.F.; SHEVLYAKOVA, T.N.

Thermodynamic properties of fused salt solutions in the CdBr_2 -
NaBr system. Zhur.prikl.khim. 34 no.11:2570-2573 N '61.

(MIRA 15:1)

1. Leningradskiy elektrotekhnicheskii institut im. V.I.Ul'yanova
(Lenina).

(Salts)

(Systems (Chemistry))

S/137/62/000/009/001/033
A006/A101

AUTHORS: Lantratov, M. F., Morachevskiy, A. G.

TITLE: Electrochemical investigation of the thermodynamical properties of liquid ternary metallic systems

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 9, 1962, 6, abstract 9A25
("Izv. Leningr. elektrotekhn. in-ta", 1961, no. 6, 228 - 264)

TEXT: This is a review. The authors analyze and classify literature data on thermodynamical properties of liquid ternary metallic systems which had been investigated by the method of emf concentration circuits and by measuring the partial vapor pressure of the components. Darken's and Wagner's methods of calculating integral thermodynamical characteristics of ternary systems are discussed. The ternary systems are divided into 7 classes according to the types of phase diagrams of boundary binary systems. For many systems lines of iso-activity of the components at 400 - 800°C and isolines ΔZ^* are plotted on concentration triangles. Substantial errors are obtained in the calculation of mixing heat and entropy values ΔH and ΔS in ternary systems. The calculations

Card 1/2

Electrochemical investigation of the...

S/137/62/000/009/001/033
A006/A101

are based on the experimental determination of partial molar thermodynamical characteristics for one of the components by the Darken method. The errors are particularly noticeable at low absolute values ΔH and ΔS , i.e. in systems with insignificant deviations from ideal behavior.

I. Levtonov

[Abstracter's note: Complete translation]

Card 2/2

S/076/62/036/011/009/021
B101/B180

AUTHORS: Lantratov, M. F., and Skirstymonskaya, B. I. (Leningrad)

TITLE: Depolarization in the deposition of alkali metals on liquid cathodes

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 11, 1962, 2442 - 2447

TEXT: The decomposition voltages of pure KCl (810°C) and NaCl (850°C) were measured on solid (Mo, Fe, Ni) and liquid (Zn, Pb, Sn, Bi, Sb) cathodes. $\Delta\phi$ the depolarization was determined for deposition of K and Na on liquid cathodes and compared with the values calculated from thermodynamic data. The results (Table 2) show that the depolarization depends on the nature of the liquid cathode and on the nature of interaction during the formation of the alloy. The relations obtained can be applied to other examples of liquid alloys produced on the cathode by the electrolysis of fused salts. There are 2 figures and 2 tables.

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im. V. I. Ul'yanova (Lenina) (Leningrad Electrotechnical Institute imeni V. I. Ul'yanov (Lenin))

Card 1/2

Depolarization in the deposition...

S/076/62/036/011/009/021
B101/B160

SUBMITTED: July 5, 1961

Table 2. Decomposition voltage and depolarization in the deposition of alkali metals on different cathodes.

Legend: (1) Cathode; (2) decomposition voltage; (3) $\Delta \varphi_{exp}$, v; (4) $\Delta \varphi_{theor}$; (5) composition of the most stable compound and its m.p. according to M. Hansen, K. Anderko, Constitution of binary alloys, 1958; (6) series of congruently melting compounds.

| | ① | ② | ③ | ④ KCl (810°) | ⑤ |
|----|-------|------|--------------|--------------|---------------------------|
| Mo | 3,44 | — | — | — | — |
| Ni | 3,44 | — | — | — | — |
| Fe | 3,44 | — | — | — | — |
| Zn | 3,10 | 0,34 | — | — | — |
| Pb | 2,78 | 0,66 | 0,65 (600°) | — | *KZn ₁₃ (599°) |
| Sn | 2,53 | 0,91 | — | — | KPb (578°) |
| Bi | 2,27 | 1,17 | 1,07 (575°) | — | KSn (600°) |
| Sb | 2,16 | 1,28 | — | — | K ₃ Bi (671°) |
| | | | | NaCl (850°) | K ₃ Sb (812°) |
| Mo | 3,245 | — | — | — | — |
| Fe | 3,24 | — | — | — | — |
| Zn | 2,97 | 0,27 | 0,275 (600°) | — | — |
| Pb | 2,74 | 0,50 | 0,59 (600°) | — | NaZn ₁₃ (557°) |
| | | | | | Ряд конгруэнтно пла- |
| Sn | 2,78 | 0,46 | 0,49 (600°) | — | вящихся соединений ⑥ |
| Bi | 2,38 | 0,86 | 0,82 (475°) | — | NaSn (576°) |
| Sb | 2,28 | 0,96 | — | — | Na ₃ Bi (778°) |
| | | | | | Na ₃ Sb (856°) |

Card 2/2

LANTRATOV, M.F.; SKIRSTYMONSKAYA, B.I.

Depolarization in the deposition of alkali metals on liquid cathodes. Zhur. fiz. khim. 36 no.11:2442-2447 N'62.

(MIRA 17:5)

1. Leningradskiy elektrotekhnicheskii institut imeni Ul'yanova (Lenina).

IANTRATOV, M. F., kand. khimicheskikh nauk, dotsent; MORACHEVSKIY,
A. G., kand. tekhn. nauk

Electrochemical studies of the thermodynamic properties of
liquid ternary metal systems. Izv. LETI 59 no.46:228-264
'62. (MIRA 15:10)

(Alloys) (Systems(Chemistry))

LANTRATOV, M.F.; MORACHEVSKIY, A.G.; ANTONOVA, M.I.

Thermodynamic properties of liquid alloys of the Na - Zn system.
Zhur.prikl.khim. 36 no.6:1278-1283 Je '63. (MIRA 16:8)
(Zinc-sodium alloys--Thermodynamic properties)

LANTRATOV, M.F.; MOISEYEVA, O.F.

Conductance of fused salt solutions in the systems
PbBr₂ - NaBr and PbBr₂ - KBr. Zhur. prikl. khim. 36 no.10:
2201-2205 0 '63. (MIRA 17:1)

1. Leningradskiy elektrotekhnicheskii institut imeni Ul'yanova
(Lenina).

EFROS, I.D.; LANTRATOV, M.F.

Decomposition voltage of potassium fluotantalate in fused salt
solutions. Zhur. prikl. khim. 36 no.12:2659-2666 D'63.
(MIRA 17:2)

ALABYSHEV, A.F.; LANTRATOV, M.F.

Investigating thermodynamic properties of liquid metal solutions
in the system Sb - Zn - Cd. Trudy LPI no.223:55-66 '63. (MIRA 17:11)

EFROS, I.D.; IANTRATOV, M.P.

Fusibility of the region rich in potassium fluoride of the
system $KF - TaF_5$. Zhur. prikl. khim. 57 no.11:2521-2523 1984
(MIRA 1381)

ALABYSHEV, Aleksandr Filosofovich, doktor tekhn. nauk, prof.;
LANTRATOV, Mikhail Fedorovich, kand. khim. nauk;
MORACHEVSKIY, Andrey Georgiyevich, kand. tekhn. nauk;
ZASLAVSKAYA, M.I., red.

[Reference electrodes for fused salts] Elektrody sravneniya dlia rasplavlennykh solei. Moskva, Metallurgiya, 1965. 129 p. (MIRA 18:3)

LANTRATOV, S. YE.

Shoe Industry

At a restored factory, Leg. prom., 12, No. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, October 1952. Unclassified.

IANTRATOVA, A.S.

Geobotanical analysis of the white wormwood (*Artemisia alba*) formation. Trudy Kar.-fin.gos.un.6 no.3:65-87 '54. (MLRA 10:2)

1. Kafedra botaniki.

(Volga Valley--Pastures and meadows) (Arthemisia)
(Botany--Ecology)

Lantratova, A.S.

USSR / Forestry. Forest Plants.

K-5

Abs Jour: Ref Zhur - Biologiya, No. 1, 1958, 1369

Author : Lantratova, A.S.

Inst : ~~Petrozavodsk~~ University

Title : The Influence of Geographical Derivation of
Siberian Larch Seed on the Condition of the
Shoots in the Southern Regions of the Karelian
ASSR

Orig Pub: Uch. zap. Petrozavodskogo un-ta, 1956, (1957),
7, No. 3, 49-64.

Abstract: The Tuvinskaya autonomous oblast', Altay kray,
and Khakassiya Larch seeds from various re-
gions of Siberia were planted in the botanical
garden of Petrozavodsk University and in the

Card 1/3

USSR / Forestry. Forest Plants.

K-5

Abs Jour: Ref Zhur - Biologiya, No. 1, 1958, 1369

"Kiyach" national forest. The Western Siberian seeds were the heaviest in absolute weight (7.6 g.); the lightest were those from the Tuvinskaya Autonomous Oblast' (5.5 g.). They were sown in pine- and spruce-type forests. The seed in the sphagnous pine forest gave the highest percent of germinability, and in the lichenous pine forest a low percent. The Western Siberian seed possessed high sprouting energy, high ground germinability, and produced the hardiest shoots in types of forests with a rather moist upper soil layer. However, the shoots from these seeds appeared later than all the others (the Altay seeds were the first to sprout). It was noted that the Western Siber-

Card 2/3

K-5

USSR / Forestry. Forest Plants.

Abs Jour: Ref Zhur - Biologiya, No. 1, 1958, 1369

ian seedlings were the first to form coniferous needles and internodes; they also evidenced the most intensive growth compared with seedlings from other seeds (especially the Tuvinskiy). All shoots grew best in the sphagnum pine forest and worst in the lichenous. The growth of the root systems of all species was optimal in the bilberry pine forest. In the nursery, located at the edge of the forest, the ground germinability of the larch seeds was lower than on the clearings; the growth intensity of the shoots, however, approached the rates indicated by the clearing indices. Under nursery conditions the Tuvinskiy types showed better results than other seeds. Technical recommendations are given for cultivating these plants.

Card 3/3

Country : USSR
Category : Forestry. Forest Cultures. K
Abs Jour : RZhBiol., No 6, 1959, No 24733
Author : Lantratova, A. S.
Inst : Petrozavodsk University.
Title : Effect of the Presowing Treatment of Seeds
on the Growth of Seedlings of the Siberian
Larch.
Orig Pub : Uch. zap. Petrozavodsk. un-ta, 1957 (1958),
8, No. 3, 49-53
Abstract : On the territories of the Botanical Garden of
Petrozavodsk University, the Forest Reserva-
tion "Kivach" and Petrozavodsk State Forest
Management, seeds of the Siberian larch from
Altay, Buryat-Mongolia, Leningradskaya Oblast
Card : 1/4

41

Country : USSR
Category : Forestry. Forest Cultures.
Abs Jour : RZhBiol., No 6, 1959, No 24733

K

Author :
Inst :
Title :

Orig Pub :

Abstract : and from the local Sortaval' State Forest were
planted repeatedly three time on 24-27 May
1954 and 1955. Prior to planting, the seeds
were kept for 12 hours in water, in 1 per-
cent lime and 0.03 percent manganese solu-
tions. Dry seeds served as a control. Treat-
ment of the seeds by water increased the ger-
mination of the seeds by 10 percent; by the
lime solution, 14 percent, and by the solu-

Card : 2/4

Country : USSR
Category : Forestry. Forest Cultures.

K

Abs Jour : RZhBiol., No 6, 1959, No 24733

Author :
Inst :
Title :

Orig Pub :

Abstract : tion of Mn, 27.4 percent. The most lively sprouts, the greatest height and the most developed root system were formed in seedlings from seeds treated with Mn. The average height of one-year-old seedlings from these seeds were 2-3 times larger than those under control, and an increment for the second vegetative period exceeded almost tenfold the increment of

Card : 3/4

Country : USSR
Category : Forestry. Forest Cultures.

K

Abs Jour : RZhBiol., No 6, 1959, No 24733

Author :
Inst :
Title :

Orig Pub :

Abstract : the plants under control. Good results were
obtained by treatment of the seeds with lime.
-- N. Ye. Skripitsyna

Card : 4/4

LANTRATOVA, A.S., dotsent; BUTORINA, L.A.

Change in the germination of seeds and growth of seedlings
of larch under the influence of trace elements. Uch.zap.
Petrozav.gos.un. 11 no.4:47-50 '63.

(MIRA 19:1)

1. Kafedra botaniki i fiziologii rasteniy Petrozavodskogo
gosudarstvennogo universiteta.

IANTRATOVA, A.S., dotsent; GYUBIYEVA, V.F.

Use of heteroauxin in growing the Siberian larch. Uch. zap.
Petrozav. gos. un. 12 no.3:43-46 '64. (MIRA 19:1)

1. Kafedra botaniki i fiziologii rasteniy Pe'trozavodskogo
gosudarstvennogo universiteta imeni O.V. Kutsirena.

LANTRATOVA, A.S., dotsent; POTAKHINA, L.N.

Manganese content of annual shoots of the Siberian larch.
Uch. zap. Petrozav. gos. un. 12 no.3:72-75 '64.

(MIRA 19:1)
1. Kafedra botaniki i fiziologii rasteniy Petrozavodskogo
gosudarstvennogo universiteta imeni O.V. Kuusinen.

LANTRATOVA, A.S., dotsent

Effect of zinc on the growth of one-year-old Sukachev's
Larch seedlings. Uch.zap.Petrozav.gos.un. 11 no.4:
36-39 '63.

(MIPA 19:1)
1. Kafedra botaniki i fiziologii rasteniy Petrozavodskogo
gosudarstvennogo universiteta.

LANTRATOVA, A.S., dotsent

Use of trace elements in growing the Siberian pine. Uch. zap.
Petrozav. gos. un. 12 no.3:36-39 '64. (MIRA 19:1)

1. Kafedra botaniki i fiziologii rasteniy Petrozavodskogo
gosudarstvennogo universiteta imeni O.V. Kuusinen.

LANTRATOVA, Antonina Stepanovna; OVCHINIKOVA, Yevgeniya Aleksandrovna;
SHEKHTER, D.I., red.

[Key to trees and shrubs] Opredeletel' derev'ev i kustarnikov.
Petrozavodsk, Karel'skoe knizhnoe izd-vo, 1965. 153 p.
(MIRA 18:9)

SHTERTSL', Ya., FRANEK, F.; RZHIGA, I., KOSTKA, Y.; LANTS, A.

Genesis and properties of nonantigenic γ -globulin in newborn animals; first appearance of natural antibodies and their relation to bactericidal properties of the serum. Zhur.mikrobiol., epid.i immun. 33 no.8:60-68 Ag '62. (MIRA 15:10)

1. Iz Biologicheskogo instituta Chekhoslovatskoy akademii nauk, Praga.

(GAMMA GLOBULIN) (INFANTS (NEWBORN))

L 22565-66 EWP(e) WH

ACC NR: AP6012945

SOURCE CODE: UR/0072/65/000/009/0039/0042

AUTHOR: Yashchuk, A. P.; Lants, M. Ye.

41

ORG: Insulator and Fittings Plant im. Artem (Armaturno-izolyatornyy zavod)

13

TITLE: High-strength porcelain for small-size high-voltage insulators

SOURCE: Steklo i keramika, no. 9, 1965, 39-42

TOPIC TAGS: porcelain, dielectric loss, quartz, tensile strength, electric insulator, bending strength

ABSTRACT: The article describes a new formula for porcelain on a base of the presently used raw material in the Slavyanskiy plant imeni Artema without the additional introduction of expensive components into the porcelain composition. The new composition is known as the MK-24 porcelain composition and is characterized by a reduced alkali content and increased quartz content. Reducing the feldspar material content and raising the dispersity of the grog components made it possible to decrease the porcelain's dielectric loss tangent angle by about 30 to 40%. Petrographic analysis permitted the conclusion that the high electromechanical properties of the MK-24 porcelain are primarily due to the high degree of structural homogeneity. Insulators made from this composition have augmented electromechanical indexes which permit a

Card 1/2

UDC: 666.593

L 22565-66

ACC NR: AP6012945

reduction in their size. The step-by-step method of their production is given. The electric strength of the MK-24 composition is higher than in comparable materials. The same is true for tensile strength and static and dynamic bending. Orig. art. has: 2 figures and 4 tables. [JPRS]

SUB CODE: 11, 09, 20 / SUBM DATE: none

Card 2/2 BK

AAMISEPP, I.; EICHENBAUM, E.; HALLER, E.; KAARLI, K.; KIIK, H.;
KIVI, V.; KOTKAS, H.; KORJUS, H.; LEIVATEGIJA, L.; LIIV, J.;
LÄNTS, L.; MÄLKSCO, A.; PEDAJA, V.; POLNA, H.; RANDALU, I.;
RUUGE, J.; SEKSEL, H.; TOOMRE, R.; TUPITS, H.; TUUL, S.;
TÖNISSON, H.; TÄÄGER, A.; VIIRAND, M.; VAHENÕMM, K.; ARAK, A.,
red.

[Plant breeding] Taimekasvatus. Tallinn, Eesti Raamat, 1964.
813 p. [In Estonian] (MIRA 18:1)

YASHCHUK, A.P.; LANTS, M.Ye.

High-strength porcelain for small high-voltage insulators. Stek.
1 ker. 22 no.9:39-42 S '65. (MIRA 18:9)

15(2)

AUTHORS:

Yashchuk, A. P., Lants, M. Ye.

SOV/72-59-6-12/18

TITLE:

The Use of Kaolins Without Electrolytes (Primeneniye bezelektrolitnykh kaolinov)

PERIODICAL:

Steklo i keramika, 1959, Nr 6, pp 45 - 47 (USSR)

ABSTRACT:

In this article the authors give a description of experiments made in the Slavyanskiy armaturno-izolyatornyy zavod imeni Artema (Slavyansk Factory for Fittings and Insulators imeni Artem) for the purpose of replacing the kaolin of the Prosyanskoye deposit by the kaolin of the Polozhskoye deposit. Table 1 contains the analyses of both kinds of kaolin, which differ but little from one another. Table 2 gives their granulation according to the analysis of Sabanin, and table 3 shows their degrees of plasticity resulting from the Vasil'yev method. After performing these analyses, the Factory imeni Artem produced a porcelain mass only from Polozhskiy kaolin under operational conditions which did not differ from the mass hitherto made from Prosyanskoy and Polozhskiy kaolins. (Table 4). From both masses samples were made and subjected to electro-mechanical tests made by GIEKI, the results of which are listed in table 5.

Card 1/2